

APPENDIX A

Draft Incidental Take Permit

THIS PAGE INTENTIONALLY LEFT BLANK



**California Department of Fish and Game
NORTHERN REGION
601 LOCUST STREET
REDDING, CA 96001**

**California Endangered Species Act
Incidental Take Permit No. 2081-2005-026-01
SHASTA VALLEY RESOURCE CONSERVATION DISTRICT
SHASTA RIVER WATERSHED COHO PERMIT PROGRAM**

I. INTRODUCTION

The Department of Fish and Game is issuing this permit ("Permit") to the Shasta Valley Resource Conservation District ("SVRCD" or "Permittee") pursuant to Fish and Game Code section 2081, subdivisions (b) and (c), and section 783 *et seq.* in title 14 of the California Code of Regulations. The California Endangered Species Act ("CESA") (Fish & G. Code, § 2050 *et seq.*) prohibits the take¹ of endangered, threatened, or candidate² species, unless the Department authorizes, by permit, the take of such species ("take authorization"). The Department may issue such a permit, referred to as an "incidental take permit," if the take is incidental to an otherwise lawful activity and the other conditions set forth in section 2081, subdivisions (b) and (c), are met.

II. PERMITTEE INFORMATION

A. Name

Shasta Valley Resource Conservation District

¹Pursuant to Fish and Game Code section 86, "'take' means hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill."

²"Candidate species" means a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that the Fish and Game Commission has formally noticed as being under review by the Department for addition to either the list of endangered species or the list of threatened species or a species for which the Commission has published a notice of proposed regulation to add the species to either list. (See Fish & Game Code, § 2074.2.)

B. Name and Title of Principal Officer

Richard Kuck, Chairman
Board of Directors
Shasta Valley Resource Conservation District

C. Contact Person

Richard Kuck, Chairman
Board of Directors
Shasta Valley Resource Conservation District
530-842-6121, ext. 106

D. Mailing Address

Shasta Valley Resource Conservation District
215 Executive Court, Suite A
Yreka, CA 96097

E. Agent for Service of Process

Adriane Garayalde, District Administrator
Shasta Valley Resource Conservation District

III. EFFECTIVE DATE AND TERM OF PERMIT

This Permit shall be executed in duplicate original form and shall become effective once a duplicate original is acknowledged by signature of the Permittee on the last page of the Permit and returned to the Department's Office of the General Counsel, with a copy to the Department's Northern Region in Redding, California. The authorization under this Permit to take the Covered Species listed below shall expire ten years from the effective date of the Permit, unless the Department renews the Permit, the Department revokes or terminates the Permit prior to its expiration, or the SVRCD relinquishes the Permit prior to its expiration.

IV. DESCRIPTION OF PERMIT PROGRAM

This Permit establishes a program with SVRCD through which SVRCD, the Department of Water Resources ("DWR") or any other entity approved by the Department that agrees to perform DWR's obligations under this Permit, and those agricultural operators (defined below) who choose to participate in the

Program will be authorized to take coho salmon (*Oncorhynchus kisutch*) incidental to an activity this Permit covers, defined below as a “Covered Activity” (“Program”). Under the Program, agricultural operators will receive incidental take authorization for coho salmon by means of an individual “sub-permit.” The sub-permittee will be required to execute the sub-permit and be responsible for complying with its terms and conditions. The Department will determine the terms and conditions in this Permit that apply to the sub-permittee’s particular Covered Activity or Covered Activities and incorporate them into the sub-permit by reference and/or by writing. The Department may also include terms and conditions in a sub-permit that are not included in this Permit, if the Department determines that such additional terms and conditions are necessary to avoid, minimize, or mitigate the take of coho salmon incidental to a Covered Activity. The purpose of the Program is to assist agricultural operators to comply with CESA and to complete projects consistent with the goals of the “Recovery Strategy for California Coho Salmon” (2004) (“Recovery Strategy”) and projects identified in the Shasta Watershed Restoration Plan.

V. PROGRAM AREA

The Program Area is the Shasta River watershed, including the Shasta River and its tributaries, in Siskiyou County as shown in Attachment 1, “Shasta River Watershed Map” (“Program Area”).

VI. AGRICULTURAL OPERATOR

For purposes of this Permit, “agricultural operator” is defined as any natural person or any partnership, corporation, limited liability company, trust, or other type of association or any public agency, as defined in CEQA Guidelines, §15379, who diverts water from a stream by means of an active diversion in the Program Area for an agricultural purpose, or is involved in an agricultural operation on property in the Program Area through which or adjacent to which a stream flows “Active diversion” is defined as a surface water diversion that has been operated at least one out of the last five years.

VII. COVERED ACTIVITIES

The Permit and any sub-permit issued under the Program shall apply only to take incidental to the following activities that occur in the Program Area and are otherwise lawful (referred to collectively as “Covered Activities,” and individually as a “Covered Activity”): 1) the diversion of water from streams, channels, or sloughs for irrigation or watering of stock by any means, including instream pumps; 2) the installation, operation, maintenance, and removal of devices and

structures used to divert water; 3) the installation, operation, and maintenance of fish screens; 4) the movement of livestock and vehicles across flowing streams and the construction of livestock and vehicle crossings and livestock watering lanes; 5) the installation and maintenance of riparian exclusion fencing; 6) riparian restoration or revegetation activities; 7) the installation, maintenance, and repair of instream habitat improvement structures; 8) the installation and maintenance of stream gages; 9) barrier removal and fish passage projects; 10) the grazing of livestock within the bed, bank, or channel of a stream under specified conditions; 11) water management, water monitoring, and watermastering activities; 12) activities associated with the implementation of avoidance, minimization, and mitigation measures required by the Permit or any sub-permit; 13) activities associated with monitoring efforts required by this Permit or any sub-permit; and 14) activities associated with conducting research on coho salmon. The Covered Activities are more fully described in Attachment 2, "Covered Activities." This Permit does not, and any sub-permit shall not, cover water use for domestic, municipal, industrial, or mining purposes, power production for commercial purposes, and pesticide/herbicide use.

VIII. COVERED SPECIES

The Permit authorizes the take of coho salmon and no other species in the Program Area incidental to a Covered Activity ("coho salmon"). Coho salmon that occur in the Program Area are listed under CESA as a threatened species. Take authorization under any sub-permit issued under the Program shall also be limited to coho salmon.

IX. INCIDENTAL TAKE AUTHORIZATION

The Permit authorizes SVRCD and its employees, contractors, agents to take coho salmon incidental to a Covered Activity, subject to the terms and conditions of the Permit. The Permit does not authorize the intentional take of coho salmon, take of coho salmon from an activity that is not a Covered Activity, or take of coho salmon that results from a violation of a term or condition of the Permit. Any sub-permit issued under the Program shall likewise authorize the sub-permittee, its employees, contractors, and agents, to take coho salmon incidental to a Covered Activity, subject to the terms and conditions of the sub-permit. The sub-permit shall not authorize the intentional take of coho salmon, take of coho salmon from an activity that is not a Covered Activity, or take of coho salmon that results from a violation of a term or condition of the sub-permit.

X. FULLY-PROTECTED SPECIES

This Permit does not, and sub-permits shall not, authorize the take of any species listed in Fish and Game Code sections 3511, 4700, 5050, or 5515, referred to as “fully-protected” species.

XI. RECOVERY STRATEGY

In February 2004, the Fish and Game Commission adopted the Recovery Strategy. The Recovery Strategy emphasizes cooperation and collaboration, and recognizes the need for funding, public and private support for restoration actions, and maintaining a balance between regulatory and voluntary efforts to meet the goals of the Recovery Strategy. The Shasta and Scott River watersheds were identified for a pilot program to address coho salmon recovery issues and solutions related to agriculture and agricultural water use in Siskiyou County. In addition to identifying recommendations for the pilot program, the Shasta-Scott Recovery Team identified the need to develop a programmatic implementation framework (i.e., an incidental take permit program) that works toward the recovery of coho salmon, while affording take authorization to agricultural operators. The avoidance, minimization, and mitigation actions required by this Permit are consistent with the recovery tasks identified in the Shasta-Scott Pilot Program of the Recovery Strategy.

XII. SUB-PERMIT PROGRAM ADMINISTRATION AND STRUCTURE

After the Permit takes effect, a 60-day sub-permittee enrollment period shall begin. Any agricultural operator who would like to enroll in the Program after the initial enrollment period closes may do so from January 1 to February 28 each year.

After an agricultural operator enrolls in the Program, the SVRCD will assist the operator in obtaining a sub-permit from the Department. The sub-permit will include measures the sub-permittee will be responsible for implementing to avoid and minimize impacts to coho salmon that may result from a Covered Activity. An agricultural operator may obtain authorization to take coho salmon incidental to a Covered Activity by obtaining a sub-permit after enrolling in the Program, or a separate incidental take permit issued by the Department. Nothing in this Permit gives to SVRCD the authority to issue a sub-permit or provide take authorization to agricultural operators in any form.

XIII. CONDITIONS OF PERMIT AND SUB-PERMIT APPROVAL

- A. SVRCD shall coordinate this Permit on behalf of all agricultural operators who participate in the Program. Such agricultural operators will receive authorization to take coho salmon incidental to a Covered Activity pursuant to a separate permit reviewed and issued by the Department, described above and hereinafter as a “sub-permit.” An agricultural operator who participates in the Program and obtains a sub-permit is referred to above and hereinafter as a “sub-permittee.”
- B. SVRCD shall be responsible for implementing the mitigation and monitoring requirements that apply to it in this Permit.
- C. All mitigation measures identified in this Permit that are implemented by the SVRCD or a sub-permittee since the date that the Department deemed the application of this Permit complete (April 28, 2005) shall be counted in any determination of whether the SVRCD or a sub-permittee has fully mitigated for the take of coho salmon this Permit or any sub-permit authorizes.
- D. SVRCD shall comply with the terms and conditions of this Permit that apply to it within the timeframes set forth below and in Attachment 3, “Monitoring and Adaptive Management Plan” (“MAMP”), and shall comply with all other applicable requirements of this Permit and the MAMP. Each sub-permittee shall comply with the terms and conditions of this Permit that apply to him/her that are included in the sub-permit within the timeframes set forth below and in the MAMP, and shall comply with all other applicable requirements of the MAMP.
- E. SVRCD and each sub-permittee shall fully implement and adhere to the conditions below that apply to them.
 - 1. General conditions
 - (a) SVRCD shall conduct an education program for all sub-permittees within sixty days of the close of each sub-permittee enrollment period, described below. The education program shall consist of a presentation by a person or persons knowledgeable about the biology of coho salmon, the terms of the Permit, and CESA. The education program shall include a discussion of the biology of coho salmon, their habitat needs, their threatened status under

CESA, and the avoidance, minimization, and mitigation measures required by this Permit. A fact sheet containing this information shall also be distributed to all sub-permittees. Upon completion of the education program, the sub-permittees shall sign a form acknowledging that they attended the education program and understand the avoidance, minimization, and mitigation measures required by this Permit. SVRCD shall be responsible for preparing the presentation, the fact sheet, and acknowledgment form; for distributing and collecting the forms; and for making the completed forms available to the Department upon request. SVRCD shall submit the presentation, fact sheet, and acknowledgment form to the Department for its prior review and approval.

- (b) SVRCD and any sub-permittee shall immediately stop, contain, and clean-up any fuel, lubricants, or other hazardous materials that leak or spill while engaged in a Covered Activity. SVRCD or the sub-permittee shall notify the Department immediately of any leak or spill of hazardous materials into a stream or in a place where it can pass into a stream. While engaged in a covered activity, SVRCD and all sub-permittees shall store and handle hazardous materials at least 150 feet away from the edge of mean high water elevation of any stream and properly dispose any unused or leftover hazardous materials offsite. Exceptions to this provision may be provided in individual sub-permits for pre-existing structures with adequate containment facilities.
- (c) Sub-permittees shall provide non-enforcement Department employees written consent to access the sub-permittee's property for the specific purpose of verifying compliance with, or the effectiveness of, the avoidance, minimization, and mitigation measures required by this Permit or a sub-permit and/or for the purpose of fish population monitoring in the Shasta River and its tributaries, provided the Department notifies the sub-permittee at least 48 hours in advance, whether verbally or in writing.
- (d) Each sub-permittee shall be solely responsible for any costs the sub-permittee incurs to implement any avoidance or minimization measures required under a sub-permit and

SVRCD shall be solely responsible for any costs it incurs to implement any mitigation and monitoring measures required under this Permit.

- (e) SVRCD's mitigation obligations under this Permit shall end only when the SVRCD has implemented the avoidance, minimization, and mitigation measures identified in this Permit, for which it is responsible, that are necessary to fully mitigate for authorized take of coho salmon that occurred while this Permit and all sub-permits was in effect and the Final Report (described below) is deemed complete pursuant to Section XVI.C, regardless of whether the Permit has expired, been revoked, relinquished, or terminated.
- (f) SVRCD shall submit to the Department an irrevocable letter of credit or another form of security other than a bond ("Security") approved by the Department's Office of the General Counsel in the principal sum of \$100,000. The Security shall allow the Department to draw on the principal sum if the Department, in its sole discretion, determines that SVRCD or a sub-permittee has failed to comply with any of the avoidance, minimization, mitigation, or monitoring measures in this Permit or a sub-permit for which the SVRCD or sub-permittee is responsible. The Department shall not execute this Permit until after the Department has approved the Security.

If the Department draws on the Security, it shall use the amount drawn to implement the avoidance, minimization, mitigation, and monitoring measures the SVRCD or sub-permittee has failed to implement, unless the Department determines, in its sole discretion, that the measure can no longer be successfully implemented or will not be effective, in which case the Department may use the amount drawn to fund other measures within the Program Area that will more effectively avoid, minimize, or mitigate impacts on coho salmon caused by a Covered Activity.

- (g) Instream work on structural restoration projects by SVRCD or a sub-permittee shall occur from July 1 to October 31 when coho salmon are least likely to be present and/or when water temperatures exceed the tolerance levels of coho

salmon. If the work needs to be completed before July 1 or after October 31, SVRCD or the sub-permittee shall request a variance from the Department in writing. If the Department grants the request, the work shall be completed in accordance with the avoidance, minimization, mitigation, and monitoring measures the Department specifies in granting the variance.

- (h) Instream equipment operations by SVRCD or a sub-permittee shall occur when coho salmon are least likely to be present and/or when water temperatures exceed the tolerance levels of coho salmon, which is generally from July 1 to October 31, except as otherwise provided in BMPs adopted pursuant to Section XV.F below. SVRCD will verify with the Department when such operations may begin each year prior to their commencement. To the extent possible, all such work shall be done from outside the channel. All refueling of machinery shall be done no less than 150 feet away from the edge of the mean high water elevation of any stream. Access without specific Department approval is allowed to correct emergency problems demanding immediate action (as defined in Public Resources Code section 21060.3)
- (i) SVRCD and each sub-permittee shall comply with Fish and Game Code section 1600 *et seq.*, if applicable.

2. Mitigation obligations of SVRCD

SVRCD's mitigation obligations are described below.

(a) Flow enhancement

The practice of diverting water from coho salmon-bearing streams increases the risk of take. To mitigate potential take of coho salmon from the diversion of water in streams where coho salmon occur, SVRCD shall implement the programs below to provide for or support the instream needs of coho salmon at specific life-cycle stages.

- (i) Development and implementation of Shasta River Water Trust. SVRCD shall develop a locally-based Shasta River Water Trust ("Water Trust") specific to the conditions in the Shasta River watershed. The SVRCD shall develop a guidance document ("charter") that governs the Water Trust. The charter shall be subject to the Department's approval. The Water Trust shall provide instream flows by leasing or purchasing water from sub-permittees or other willing water right holders for instream beneficial use. The Water Trust shall use the income generated from the endowment that funds the Water Trust, or from other sources, to lease or purchase water from sub-permittees or others for instream beneficial use in accordance with guidelines prepared by SVRCD and approved by the Department. SVRCD shall begin developing the Water Trust immediately upon the effective date of the Permit. A forbearance agreement with the sub-permittee or other water right holder shall be required when leasing or purchasing water for one year or less. Water leased or purchased for greater than one year shall be dedicated to instream beneficial use pursuant to Water Code section 1707.
- (ii) Improve baseline instream flows and/or water quality. The SVRCD shall improve baseline instream flows and/or water quality within critical reaches of the Shasta River and its tributaries and at critical life stages of coho salmon by either installing water efficiency and/or water management improvement projects on sub-permittees properties or changing/adding points of diversion to keep flows instream to point of use. Within one year of the effective date of this Permit, SVRCD will provide to the Department, for its review and approval, a list of priority stream reaches for flow enhancement based on coho life stage, need and work with sub-permittees to address overall irrigation efficiency, and delivery considerations to accomplish aquatic habitat improvement. Generally, a Water Code section 1707 water transfer/dedication for instream benefits will be

pursued where the net water savings is consistent with the State Water Resources Control Board policy.

- (iii) Develop and implement a Contingency Plan for Dry and Critically-Dry Water Years. SVRCD shall submit a detailed Contingency Plan for Dry and Critically-Dry Water Years ("Contingency Plan") to the Department for its review and approval within three years of the effective date of the Permit. The Contingency Plan shall identify the criteria to determine when a year is dry or critically-dry and describe a process by which SVRCD will coordinate with sub-permittees to augment stream flows. SVRCD shall determine whether the water year will be dry or critically-dry by April 1st, based on the criteria in the Contingency Plan. Measures contained within the Contingency Plan will incorporate the best available information on both surface and groundwater (where relevant) to minimize the likelihood that critical coldwater flows to the Shasta River and its tributaries are impaired. In addition, the Contingency Plan will identify data gaps and will include a strategy to avoid stranding as defined in Section XVII.C. One component of the Contingency Plan shall be the Diversion Ramp-up Management Plan.

During the irrigation season, significant changes in stream flow occur when agricultural water users cease or begin diverting water at the same time. A rapid decrease in flow can result in the stranding of fish in shallow pools and side channels below diversions, as well as a loss of critical rearing habitat. To address this problem SVRCD, in consultation with the Department and DWR, or functional equivalent watermaster, shall develop and implement a Diversion Ramp-Up Management Plan ("Management Plan") to coordinate and monitor irrigation so as to minimize rapid reductions in instream flows and the possible stranding of coho salmon. SVRCD shall submit the Management Plan to the Department for its review and approval within one year from the effective date of the Permit. SVRCD and the sub-

permittees shall begin implementing the Management Plan immediately upon the Department's approval.

- (iv) Install alternative stock water systems. Water is diverted for stock watering purposes and/or off-stream storage in October, November, and December each year after diversions for irrigation cease. In those years when the seasonal rains arrive late, such diversions can limit the ability of returning adult coho salmon to reach potential spawning areas in tributaries to the Shasta River. To address that problem, SVRCD shall identify priority areas where additional instream flows in the fall will contribute significantly to adult coho migration. A priority plan shall be prepared by SVRCD that identifies where, if any, alternative stock watering systems may be beneficial for coho salmon. The priority plan shall be submitted to the Department for its review and approval within one year from the effective date of this Permit. The priority plan shall take into consideration groundwater availability, off stream storage capacity, and the feasibility of altering farm management practices.

If it is both practical and feasible to implement alternative stockwatering systems in the priority areas identified in the plan, the SVRCD shall install an average of two alternative stock watering systems or other flow improvement measures per year during the term of the Permit. The watering systems shall use groundwater, off stream water storage, or other appropriate method, rather than surface water. Minimizing surface water diversion in the fall will facilitate adult coho salmon access to spawning areas. For purposes of this Permit, an alternative stock water system means the wells, tanks, pumps, water lines, watering troughs, and other physical components used to provide groundwater or stored water to livestock.

Where alternative stock watering systems are installed, in years when access is flow-limited and

could be materially improved by the use of alternate stock watering systems, the diversion of surface water may begin after spawning has ceased or the natural stream flow has increased to the point where the affected diversion is no longer a significant factor for improving access to potential spawning areas.

Sub-permittees shall receive a reimbursement of the cost per day for running the alternative stock water system from the Water Trust or equivalent means if funds are available.

No sub-permittee shall be required to forego exercise of a right to divert for stock water purposes for more than four consecutive years. Within one year of the execution date of this Permit, the SVRCD shall develop and administer a program, subject to Department review and approval, to rotate the periodic exercise of diversion rights among sub-permittees to best enhance instream flows while preserving diversion rights from forfeiture.

(b) Habitat improvement

- (i) Spawning gravel enhancement. SVRCD shall work with the Department to develop and implement a Spawning Gravel Enhancement Plan ("Gravel Enhancement Plan"). The Gravel Enhancement Plan shall identify areas where gravel for coho salmon spawning could be placed effectively and where gravel can be recruited, and prioritize all immediately-needed gravel enhancement projects throughout the Program Area. SVRCD shall submit the Gravel Enhancement Plan to the Department for review and approval within two years from the effective date of the Permit.

SVRCD shall identify priority areas for the placement of gravel and/or flows that will maintain gravel quality in the Gravel Enhancement Plan. The SVRCD shall design and install constrictors and/or other spawning area enhancement structures at a total of five priority

stream reaches where spawning gravels are not plentiful, if deemed necessary in the Gravel Enhancement Plan. SVRCD shall complete all gravel enhancement projects prior to the expiration of this Permit.

- (ii) Instream habitat improvement structures. SVRCD, in consultation with the Department and sub-permittees, shall identify locations in the Program Area where instream habitat improvement structures would benefit coho salmon, and list those locations in order of priority. SVRCD shall submit the priority list to the Department for its review and approval within one year from the effective date the Permit. SVRCD shall install at least twenty instream habitat improvement structures at sites identified on the priority list prior to the expiration date of this Permit. At least ten of those structures shall be installed within five years from the effective date of the Permit. Instream habitat improvement structures may include large and small woody debris and boulder structures to improve pools and cover in areas where potential for over-summering exists.
- (iii) Riparian planting. SVRCD and the sub-permittees shall prepare and submit to the Department for its review and approval a priority list of areas currently being used by coho salmon for spawning and rearing within two years of the effective data of this Permit. Before this Permit expires SVRCD shall plant eight (8) linear miles of streambank (measured on one side of the river) of riparian habitat in the areas included on the priority list to improve instream cover and shade canopy, improve channel stabilization, and trap or hold sediment. Three (3) miles of streambank shall be planted within five years of the effective date of the Permit.

(c) Barrier removal/fish passage

Significant barriers exist in the Shasta River system that prevent fish passage or limit historical access. Some older

structures that impede fish passage are considered “legacy projects.” Restoration of passage at those sites involves efforts that go beyond minimization, and for purposes of this Permit are considered mitigation measures. SVRCD will continue to work toward eliminating the fish passage barriers identified below.

- (i) Araujo Dam Demobilization and Water Quality Improvement Project. SVRCD shall continue to work with the Department on the permanent removal of Araujo Dam, a seasonally-used flashboard dam built in 1856 that five landowners use to irrigate agricultural lands.
- (ii) Shasta Water Association's Dam Demobilization and Water Quality Improvement Project. SVRCD shall continue to work with the Department on the removal of a flashboard dam built in 1912 that approximately 130 individual landowners use.
- (iii) Grenada Irrigation District Fish Barrier Removal Project. SVRCD will develop final engineered drawings for removal of the fish passage barrier at the Grenada Irrigation District diversion and construct the new diversion structure design within eight years of the execution date of the Permit.

XIV. MONITORING PROGRAM

SVRCD shall establish a monitoring program to determine if the sub-permittee is fulfilling all sub-permit terms and conditions, implementation of the avoidance, minimization, and mitigation measures identified in the Permit and any sub-permit, and the effectiveness of those measures in improving conditions for coho salmon (“Monitoring Program”). SVRCD shall fund all monitoring activities it is responsible for performing. The Monitoring Program is summarized below and is more fully described in Attachment 3.

A. Compliance Monitoring

SVRCD shall conduct monitoring activities to verify that the avoidance, minimization, and mitigation measures identified in this Permit are being implemented in accordance with the requirements below.

1. SVRCD shall be responsible for determining if it is fulfilling the terms and conditions of this Permit by instituting a comprehensive monitoring program. The program shall include a means to confirm and monitor the implementation of the mitigation measures for which it is responsible.
2. SVRCD shall be responsible for determining if the sub-permittee is fulfilling the terms and conditions of their sub-permits by instituting a comprehensive monitoring program. The program shall include a means to: (1) confirm and monitor the implementation of the minimization and avoidance measures for which the sub-permittees are responsible, and (2) identify sub-permittees who are not or have not implemented the terms and conditions of their sub-permits. SVRCD shall immediately notify the Department of sub-permittees who SVRCD believes are not fulfilling or implementing a term or condition of their sub-permit.
3. SVRCD shall summarize the results of its monitoring activities in each of its Annual Reports (described below). Analysis of the past year's monitoring activities and the monitoring data shall be provided to the Department at that time.
4. After revocation, relinquishment, expiration, or termination of the Permit, SVRCD shall deliver a Final Report (described below) to the Department analyzing all of the avoidance, minimization, and mitigation measures implemented pursuant to this Permit, including an evaluation of their effectiveness.
5. SVRCD's obligations under this Permit shall not end until the Final Report has been deemed complete by the Department (Section XVI.C, regardless of when the Permit expires, or is revoked, relinquished, or terminated.
6. SVRCD shall conduct photo monitoring to document the installation, operation, maintenance, and effectiveness of all

avoidance, minimization, and mitigation activities (individually, "project") required under this Permit and any sub-permit.

Photo monitoring shall be used to document current conditions, implementation and effectiveness by:

- documenting pre- and post-site conditions;
- identifying key steps taken during and after the completion of a project;
- determining whether a project was correctly implemented pursuant to SVRCD and Department guidelines; and
- document ongoing maintenance of the project.

Sequential photographs shall be taken over time in order to show changes in site conditions. At a minimum, photographs shall be taken at three different times: before project implementation, directly after project implementation, and again at a later date appropriate to the particular project.

7. SVRCD shall conduct monitoring activities prior to and immediately after project implementation, using photographs and checklists for documentation. That information shall include pre-project and pre-treatment checklists. The pre-treatment checklist shall be used during monitoring to help judge effectiveness of the project.
8. SVRCD and Department project evaluators shall have access to photographs and project files to take with them on site visits.

B. Effectiveness Monitoring

SVRCD shall determine the effectiveness of the avoidance, minimization, and mitigation measures identified in this Permit and sub-permits and the extent to which the objectives of those measures have been met in accordance with the requirements below.

1. SVRCD shall conduct effectiveness monitoring before and after project implementation.
2. SVRCD shall identify at least one specific objective for each project installed pursuant to this Permit. The objective shall be documented in project files by SVRCD and shall be reported to the Department in the Annual Report.

3. SVRCD shall conduct qualitative effectiveness monitoring for all measures implemented pursuant to this Permit and any sub-permit. In addition, SVRCD shall conduct quantitative effectiveness monitoring of 10% of all instream measures implemented.

XV. ADDITIONAL SVRCD AND SUB-PERMITTEE AVOIDANCE AND MINIMIZATION OBLIGATIONS

In addition to any other obligations in this Permit that apply to SVRCD and sub-permittees, SVRCD and each sub-permittee shall implement the measures described below to avoid and minimize the incidental take of adult and juvenile coho salmon. SVRCD shall describe the implementation status of each of the following avoidance and minimization measures in each Annual Report (described below).

A. Water Management

1. Compliance with water rights

Each sub-permittee shall divert and use water in the Program Area pursuant to, and in accordance with, a valid and existing right at all times. SVRCD shall not be responsible for enforcing the sub-permittees' compliance with their right(s) to divert and use water in the Program Area.

2. Verification of the quantity of water diverted

Each sub-permittee shall verify that the quantity of water the sub-permittee is diverting or using is in accordance with a valid water right. Verification shall be performed by the watermaster for diversions that are controlled by a watermaster. In the absence of a watermaster, verification shall be performed by some other reliable means as determined by the Department. The quantities diverted at each diversion shall be reported to the Department on at least a monthly basis in the form of a database or in some other form approved by the Department.

3. Headgate and gage installation

All sub-permittees shall install a locking headgate or valve that can regulate flow, and a functional measuring device or flow meter, on

any structure or facility used to divert water, whether by pumping, through a ditch, pipe, or flume, or by some other means ("diversion") that meet Department criteria to facilitate better control and monitoring of water delivery within three years of the effective date of the Permit. SVRCD shall prepare a priority plan that identifies locations where headgate and measuring device installation is a priority and shall submit the list to the Department for review and approval within one year of the effective date of this Permit.

B. Fish Screens

1. All sub-permittees shall be responsible for fitting their diversions, including diversions for stock water, with fish screens that meet Department and the National Oceanic and Atmospheric Administration National Marine Fisheries Service's ("NMFS") criteria for steelhead fry as they exist at the time the screen will be installed. Fish screens shall be in place and maintained at all times water is being diverted, and SVRCD, in consultation with the Department, shall inspect the screens at least once a year during the irrigation season to verify that this requirement is being fulfilled and to assure that the screens are in good working condition.
2. Any unscreened diversion operated by a sub-permittee within the known range of coho salmon in the Program Area shall have a fish screen installed on or in the diversion no later than four years from the effective date of the Permit, or within two years from the date of the sub-permit, whichever date is later.
3. Each sub-permittee shall supply sufficient bypass water as determined by the Department on a case-by-case basis and, if necessary, construct or install a bypass channel or device, to carry fish, stopped by the fish screen, back to the channel from which they were diverted.
4. If a screen needs to be removed for cleaning or repair, the sub-permittee shall ensure that a replacement screen is installed immediately after the screen is removed or, alternatively, that no water is flowing through the area where the screen is located.

5. Each sub-permittee shall regularly inspect and clean all fish screens as necessary to remove debris, properly operate the bypass, and prevent over-topping of the fish screen.

C. Fish Passage Improvements

There are an estimated 92 active diversions in the Program Area within known or presumed areas of coho use. Of those, an estimated 5 impede fish passage to some extent ("fish barriers"). To address this problem, SVRCD and each sub-permittee whose diversion is a fish barrier shall comply with the below requirements in an effort to eliminate all the fish barriers.

1. Each sub-permittee whose diversion is a fish barrier shall provide volitional fish passage for both adult and juvenile coho salmon, both upstream and downstream within five years of the effective date of their sub-permit. Where such passage is inadequate, the sub-permittee shall submit plans to improve passage to the Department for review and approval. As a part of the review the Department will make a determination regarding whether or not engineered drawings are necessary for the project. If the Department determines that engineered drawings to be necessary, the sub-permittee shall submit such plans to the Department for review and approval prior to implementing the project. Annual reports that document progress to provide adequate fish passage at a diversion that is a fish barrier shall be provided to the SVRCD by the owner of the diversion. SVRCD shall submit the sub-permittees' annual reports to the Department with the SVRCD's Annual Report (described below).
2. SVRCD shall review and prioritize in the form of a written list the diversions sub-permittees use in the Program Area based on existing fish passage conditions, the impacts of the current diversion method and operation on coho salmon, the presence of coho salmon, the habitat that would be available to coho salmon were the barrier removed, and a cost-benefit estimate. SVRCD shall submit the priority list to the Department for its review and approval within one year from the effective date of the Permit. The priority list shall be used to focus efforts to remove fish barriers in the most critical areas early in the Program.

3. SVRCD shall coordinate with the Department to develop a curriculum for a fish passage workshop within eight months from the effective date of the Permit, and shall conduct a fish passage workshop for those persons who own, operate, or use diversions that are likely to obstruct passage within one year from the effective date of the Permit.
4. All diversion structures operated by sub-permittees shall comply with all provisions of the Fish and Game Code within five years of the effective date of the sub-permit

D. Livestock and Vehicle Crossings

1. Livestock and vehicles may not cross a flowing stream from October 31 through July 1 to avoid any possible damage to coho redds, except on designated lanes where measures to prevent spawning have been taken or where spawning is deemed unlikely, as documented by a Department fisheries biologist or a Department-approved coho spawner surveyor. The Department shall approve coho spawner surveyors who have demonstrated competency in identifying and classifying spawning habitat. Instream installation of any crossing improvements shall occur when coho salmon are the least likely to be present and/or when water temperatures exceed coho tolerance levels, generally July through October or when the channel is dry. SVRCD will verify with the Department when any construction activities can be undertaken on a site-by-site basis.
2. Due to the uniqueness of the landscape and conditions throughout the Program Area, SVRCD will work with landowners and the Department on the appropriate placement for improved crossing areas. Sites will be selected to avoid impacts on potential spawning habitat and coho redds. SVRCD shall develop a list of priority locations for livestock and vehicle crossing construction and shall submit the list to the Department for review and approval within one year of the effective date of this Permit. The Department will have final approval of the location and design of the crossing area prior to use.

3. The crossing sites shall meet the following criteria:
 - (a) Crossing sites shall not be located in the tails of pools, known spawning habitat, or identified, suitable spawning habitat.
 - (b) Approaches must be no steeper than 3:1, and should be sloped with clean and angular base rock.
 - (c) Angular rock shall be applied to the crossing during the period of July 1 through October 31. The diameter of angular rock shall be determined in consultation with SVRCD so as to eliminate the risk of angular rock becoming a grade control affecting channel conditions.
 - (d) In locations where the stream crossings occur on intermittent streams, application of rock shall occur when the stream channel is dry.
4. In order to ensure the crossing structures remain in operable condition, SVRCD shall monitor them annually for shifting of the base rock. During the monitoring visit, SVRCD shall evaluate fish passage and the approaches to the crossing. If the crossing is exacerbating erosion and contributing fine sediment to the stream, SVRCD shall note that in its Annual Report and the sub-permittee shall be responsible for implementing reasonable measures to correct the problem as soon as practicable.

E Riparian Fencing/Grazing of Livestock in Riparian Area

1. SVRCD shall prepare a plan that identifies in order of priority riparian locations in the Program Area that if fenced to exclude livestock would benefit coho salmon ("Riparian Fencing Plan"). SVRCD shall submit the Riparian Fencing Plan to the Department for review and approval within one year from the effective date of the Permit. SVRCD shall select and prioritize the riparian locations based on coho use of the stream segment adjacent to or near the riparian location; the severity of the impact livestock have on the stream segment adjacent to or near the riparian location; the ability of livestock to access the stream and; the condition of the vegetation in the riparian location.

2. The sub-permittees shall be responsible for installing exclusion fencing in accordance with the Riparian Fencing Plan. SVRCD shall work with the sub-permittees to identify funds that can be used to offset the cost of installing exclusion fencing in an effort to protect an average of two miles of additional stream every year (once the Riparian Fencing Plan has been approved) based on the priority list in the Riparian Fencing Plan. Until the exclusion fencing is installed, the sub-permittees shall take all reasonable precautions in regard to the watering and movement of livestock on or within the bed, banks, or channel of the Shasta River or its tributaries to ensure minimal adverse impacts to coho habitat.
3. The sub-permittees shall build any exclusion fencing approximately 35 feet from the edge of the stream bank and shall make reasonable efforts to include the existing riparian vegetation within the fenced area. A sub-permittee may deviate from the 35-foot setback requirement, provided the deviation is minor and approved by SVRCD. Sub-permittees shall be responsible for maintaining and repairing all exclusion fencing built on their property in good working order. If the exclusion fencing will be built in an area prone to flooding, or other special circumstances exist, the sub-permittee shall consult with and get the approval for any deviations from these standards from both the SVRCD and the Department to address those circumstances before the exclusion fencing is built. If after the exclusion fencing is built, flood damage impacts more than 50% of it, SVRCD, the sub-permittee, and the Department shall meet to determine the proper course of action to take.
4. All sub-permittees shall allow riparian revegetation planting and exclusion fencing to occur along designated stream reaches located on their property.
5. Sub-permittees may not graze livestock within a fenced riparian area unless the grazing is done in accordance with a grazing management plan prepared by the sub-permittee and approved by the Department. The grazing management plan shall address the timing, duration, and intensity of livestock grazing within the riparian zone and shall explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat.

F. Push-Up Dams

1. In consultation with the Department, SVRCD shall prepare and adopt a set of Best Management Practices (“BMPs”) governing the construction, operation, and/or removal of push-up dams within 6 months of the effective date of this Permit. The BMPs shall specify the conditions under which these push-up dams may be used, including, but not limited to, work windows during which the dams may be constructed and removed; provisions to allow dam passage by both adult and juvenile coho salmon; measures to minimize downstream sedimentation, turbidity, and other water quality impacts; and a description of the type of equipment that may be used to construct and remove the dams. Push-up dams are defined as temporary diversion structures created by using loaders, backhoes, or excavators to move bedload within the stream channel to form a flow barrier that seasonally diverts the flow of the stream.
2. Any sub-permittee who uses push up dams in streams within the Program Area shall implement the BMP’s, once approved by the Department, to minimize dam-related impacts.
3. No later than five years after the effective date of their sub-permit all sub-permittees shall replace their push-up dams with vortex weirs or some other diversion method, provided the Department approves the method, unless the Department determines that an alternative method is not feasible. “Feasible” means capable of being accomplished in a successful manner within a reasonable period of time, taking into account economic, environmental, social, and technological factors.

G. Other Temporary Diversion Structures

1. In consultation with the Department, SVRCD shall prepare and adopt a set of Best Management Practices (“BMPs”) governing the construction, operation, and/or removal of temporary diversion structures other than push-up dams within 6 months of the effective date of this Permit. The BMPs shall specify the conditions under which these other temporary diversion structures may be used, including, but not limited to, work windows during which they may be constructed and removed; provisions to allow passage by both adult and juvenile coho salmon; measures to minimize downstream

sedimentation, turbidity, and other water quality impacts and a description of the construction methods that may be used to construct and remove the structures. Temporary diversion structures are defined as any temporary structure (other than a push-up dam) used to seasonally divert water from a stream that is typically made with hay bales, hand-stacked rocks and cobble, tarps, wood, or a combination of these materials, placed in the channel without the use of heavy equipment.

2. Within two years from the effective date of the Permit, any sub-permittee who uses an other temporary diversion structure in streams within the Program Area shall request the SVRCD and the Department to assess the structure. The request shall be in writing. If the Department determines that the other temporary diversion structure will comply with the Fish and Game Code, then the sub-permittee may use such structure, provided that specific BMPs shall be added to the sub-permit to minimize dam-related impacts.
3. If the Department determines that the other temporary diversion structure will not comply with the Fish and Game Code, even with implementation of BMPs, the sub-permittee shall within five years of such determination replace the other temporary diversion structure with a vortex weir or some other diversion method approved by the Department.

H. Bioengineered Bank Stabilization

In areas where the slopes of streambanks on a sub-permittee's property have become unstable due to actions by the sub-permittee and re-stabilization measures are necessary to re-establish vegetation, the sub-permittee shall implement bioengineered bank stabilization techniques to prevent additional erosion from occurring. The techniques to be implemented shall be consistent with methods identified in the most recent version of the Department's California Salmonid Stream Habitat Restoration Manual and shall be approved by the Department on a site-by-site basis.

I. Irrigation Tailwater Reduction and/or Capture

SVRCD shall assist sub-permittees in the design and implementation of tailwater reduction and capture systems. SVRCD shall inventory and prioritize tailwater sources for remediation and submit the priority list of

sites to the Department for its review and approval within two years of the effective date of the Permit. Any tailwater capture system implemented pursuant to this Permit or any sub-permit shall be consistent with the standards outlined by Natural Resources Conservation Service guidelines, and shall be constructed so as not to have negative impacts on the stream either during or after construction. The sub-permittees whose property is on the priority list shall have tailwater reduction and capture systems in place by the expiration of their sub-permit.

J. Dwinnell Dam and the Montague Water Conservation District

Since 1928, Dwinnell Reservoir has stored water for the Montague Water Conservation District ("MWCD"). MWCD releases water to district members for irrigation purposes. Dwinnell Reservoir contains populations of non-native fish. Therefore, releases from the reservoir likely exacerbate existing problems of predation on coho salmon. To avoid that problem, MWCD shall screen their summer discharge from Dwinnell Reservoir into the Shasta River. In addition, MWCD shall prepare a feasibility study to investigate the design and implementation of fish screens on both the Parks Creek and Little Shasta River diversions. The feasibility study shall evaluate the water budget for intake and delivery operations and propose water management measures at Dwinnell Dam to improve coho habitat downstream of the dam. The feasibility study shall also investigate the possibility of providing fish passage at Dwinnell Dam.

XVI. SVRCD REPORTING

A. Annual Report

1. After the effective date of the Permit and until the Permit expires or terminates, SVRCD shall provide the Department an Annual Report by April 30th each year that covers the period of time from February 1 the previous year to January 31 of the current year.
2. Each Annual Report shall include, at a minimum, the following information: 1) a general description of the status of the Program, including a description of all avoidance, minimization, and mitigation measures that were implemented during the previous year; 2) a copy of an implementation database with notes showing the current implementation status of each avoidance, minimization, and mitigation measure; 3) the results of all monitoring activities conducted pursuant to the Permit; and 4) all monitoring data.

B. Five-Year Report

1. Five years after the effective date of the Permit, SVRCD shall conduct a comprehensive review of the Program and submit its findings in the form of a Five-Year Report to the Department. As part of its review, SVRCD shall evaluate coho recovery task implementation and community participation. The Five-Year Report shall include an analysis of the Program beginning on the effective date of the Permit, as well as the activities that have been implemented. The Five-Year Report shall include the Annual Report for the fifth year and recommended adaptive management actions to improve operations.

C. Final Report

1. No later than six months after the Permit expires, is revoked, or relinquished, or terminated, and all measures necessary to fully mitigate for take during the term of the Permit have been implemented, SVRCD shall provide the Department with a Final Report. SVRCD shall prepare the Final Report and include, at a minimum: 1) a copy of the implementation database with notes showing when each avoidance, minimization, and mitigation measure was implemented; 2) all available information about the incidental take of coho salmon the Permit covers; 3) information about the impacts the Covered Activities have had on coho salmon notwithstanding the implementation of the avoidance, minimization, and mitigation measures; 4) the beginning and ending dates all construction projects the Permit or any sub-permit covers; 5) an assessment of the effectiveness of the Permit's and sub-permits' terms and conditions to avoid, minimize, and mitigate impacts on coho salmon; 6) recommendations on how those terms and conditions might be changed to more effectively avoid, minimize, and mitigate such impacts in the future; and 7) any other pertinent information.

The Department shall have sixty days from receipt of the Final Report to notify the SVRCD of any information the Department believes is missing from the Final Report. If the Department does not notify the SVRCD that the Final Report is incomplete within sixty days of receipt, the Final Report shall be deemed complete. Any such notice of incompleteness shall specify the information the

Department believes is missing. The SVRCD shall have sixty days thereafter to provide the missing information, if it is available to the SVRCD, or if it cannot provide the missing information, an explanation that is acceptable to the Department of why the information is not available to the SVRCD. When the SVRCD has provided the missing information, or an explanation why it cannot provide missing information, the Final Report shall be deemed complete.

XVII. DEPARTMENT OF WATER RESOURCES SUB-PERMIT OBLIGATIONS

DWR as a sub-permittee shall be responsible for complying only with the following terms and conditions:

- A. To assist with the implementation and compliance monitoring of this Permit and sub-permits, DWR shall provide to the Department water use data for all diversions with watermaster service in the Program Area, including, but not limited to the name of the diverter, the location of the diversion, the quantity of water that may lawfully be diverted and used, the dates the watermaster visits each diversion, and the estimated or measured quantity of water diverted by the watermaster on each visit. DWR shall provide the data in the form of a database on a monthly basis from April to November each year by the second week of each month following data collection.
- B. DWR shall implement the Shasta River Decree pursuant to provisions of the Water Code in the adjudicated portions of the Shasta River Watershed, unless the Department instructs DWR otherwise pursuant to Section XVII.C below. As part of that responsibility, the DWR watermaster, or a functional equivalent, shall verify that each sub-permittee is in compliance with their respective water right(s). The watermaster shall create a database of all diversions visited on a monthly basis to verify compliance with water rights and shall provide this data monthly to the Department.
- C. DWR shall meet with the Department in person or by telephone on a weekly basis during the diversion season in order to inform the Department of any points of diversion where stranding is probable. The Department shall make a determination regarding whether or not any diversion is causing or will cause the stranding of coho salmon. For the purpose of this Permit, "stranding" is defined as a situation in which coho salmon are in a location with poor aquatic habitat conditions, due to a

reduction in flow, from which they cannot escape. The Department shall instruct DWR to reduce or cease the diversion and/or change the timing or manner of the diversion and take any other measures within DWR's control that the Department determines are necessary to correct or avoid stranding and DWR shall implement those measures immediately. However, before instructing DWR as described above, the Department will make every effort to work with SVRCD and sub-permittee to correct or avoid such take by some means other than reducing or ceasing the diversion and/or changing the timing or manner of the diversion, all in accordance with Section XVIII.

XVIII. STRANDING

If the Department determines that a diversion covered by a sub-permit is causing or will cause the stranding of coho salmon, the Department shall take the steps in the order below to avoid or minimize such stranding:

- A. The Department shall determine whether or not the sub-permittee is in compliance with the sub-permit.
- B. If the sub-permittee is not in compliance with the sub-permit, the Department shall contact the sub-permittee to determine why they are not in compliance and take appropriate action, whether or not in accordance with Section XIX.
- C. In either case, the Department shall consult with the SVRCD and sub-permittee to determine whether there are any measures the SVRCD and/or sub-permittee can take to avoid or minimize stranding.
- D. If reducing or ceasing the diversion and/or changing the timing or manner of the diversion will avoid or minimize stranding, and that is the only available measure to avoid or minimize stranding, the Department shall work with the SVRCD and sub-permittee and, if applicable, DWR to take such action.

XIX. SUSPENSION AND REVOCATION

If the SVRCD or a sub-permittee fails to comply with any term or condition in the Permit or sub-permit, the Department may suspend or revoke the Permit or sub-permit in accordance with subsection 783.7 of title 14 of the California Code of Regulations. The SVRCD or the affected sub-permittee may seek reconsideration of or appeal a suspension or revocation pursuant to section

783.8 of title 14 of the California Code of Regulations. If, during the term of this Permit or any sub-permit, these regulations are amended or superseded, then the criteria and procedures specified in the regulations in effect at the time of the suspension, revocation, reconsideration or appeal shall apply.

XX. COMPLIANCE WITH OTHER LAWS

The Permit authorizes SVRCD to take coho salmon incidental to a Covered Activity in accordance with CESA. The Permit does not satisfy any other local, state, or federal laws or necessarily entitle SVRCD to complete any Covered Activity. SVRCD is responsible for complying with all other applicable local, state, and federal laws that apply to a Covered Activity, including the following provisions in the Fish and Game Code: section 1600 *et seq.*, 5901, and 5937. Any sub-permit issued by the Department will likewise authorize a sub-permittee to take coho salmon incidental to a Covered Activity in accordance with CESA, will not satisfy any local, state, or federal laws, other than CESA, or necessarily entitle the sub-permittee to complete any Covered Activity. The sub-permittee will be responsible for complying with all other applicable local, state, and federal laws, including the following provisions in the Fish and Game Code: section 1600 *et seq.*, 5901, and 5937.

XXI. ENFORCEMENT

- A. This Permit does not authorize or require SVRCD to bring an enforcement action against a sub-permittee who is not in compliance with its sub-permit. Such enforcement will be the sole responsibility and at the sole discretion of the Department.
- B. Nothing in this Permit precludes the Department from pursuing an enforcement action against the SVRCD or a sub-permittee instead of or in addition to suspending or revoking the Permit or any sub-permit.

XXII. LIABILITY

Sub-permittees shall be solely responsible for complying with the terms and conditions of their sub-permits. The Department shall not hold SVRCD responsible for sub-permittee's non-compliance with the terms and conditions of a sub-permit. SVRCD and each sub-permittee shall be severally liable for the actions of their own employees, contractors and agents.

XXIII. FORCE MAJEURE

The SVRCD and sub-permittees shall not be responsible for the damage or destruction of any fencing, fish screen, or any other device, facility, or structure the Permit or any sub-permit requires ("property"); the failure to perform an avoidance, minimization, or mitigation measure the Permit or any sub-permit requires; or the take of coho salmon due to any natural cause beyond the SVRCD's or sub-permittee's control, including, without limitation, fire, flood, storm, and earth movement, provided, however, the SVRCD or sub-permittee: 1) notifies the Department in writing within two weeks after the event occurs, describing the event and the property damage or destruction and/or the measures the SVRCD or sub-permittee cannot perform because of it; 2) repairs or replaces the damaged or destroyed property and/or resumes performance of the avoidance, minimization, or mitigation measure as soon as practicable after the event ends; and 3) notifies the Department in writing within two weeks of repairing or replacing the property and/or resuming performance, unless the Department and the SVRCD or sub-permittee agree otherwise. This clause is intended to excuse SVRCD or sub-permittee only if the damage to the property, failure to perform the measure, or take of coho salmon could not be avoided by the exercise of due care by that party.

XXIV. ASSIGNMENT AND TRANSFER

The Permit and any sub-permit may not be assigned or transferred without the written consent of the Department in accordance with Department's CESA regulations, specifically section 783.6, subdivision (a), of title 14 of the California Code of Regulations.

XXV. RENEWAL

This Permit and any sub-permit may be renewed in accordance with the Department's CESA regulations, specifically section 783.6, subdivision (b), of title 14 of the California Code of Regulations.

XXVI. RELINQUISHMENT

- A. The SVRCD may relinquish the Permit, and a sub-permittee may relinquish a sub-permit, subject to and in accordance with the conditions below:
 - 1. Relinquishment by sub-permittee. A sub-permittee may relinquish a sub-permit by providing notice to the Department and the SVRCD

of intent to withdraw from the Program and relinquish the sub-permit. The termination of the sub-permit will be effective immediately upon receipt of the relinquishment notice. A terminated sub-permit may be reinstated by the Department within 60 days of relinquishment notification. The new sub-permit will include all of the conditions of the original sub-permit and any new conditions that the Department determines are necessary. After the sub-permit expires, the sub-permittee shall no longer be required to comply with the avoidance and minimization measures identified in the sub-permit, and shall no longer have authorization under CESA to take coho salmon. Likewise, after the sub-permit expires, the sub-permittee shall no longer have authorization under the Streambed Alteration Agreement Program for activities subject to Fish and Game Code section 1602. After the sub-permit expires, the SVRCD shall be responsible to fully mitigate any authorized take of coho salmon that occurred when the sub-permit was in effect.

2. Relinquishment by SVRCD. The SVRCD may relinquish this Permit by providing notice of the Department and all sub-permittees of its intent to withdraw from the Program and relinquish the Permit. The Permit shall expire 60 days after the Department receives the notice. All sub-permits will expire upon expiration of the Permit, which the SVRCD shall state in its notice to sub-permittees. After the Permit expires, the SVRCD shall: 1) no longer be required to comply with the Permit; 2) have no continuing financial or other obligations under the Permit and Program with the exception of the costs of implementing any measures required pursuant to Section XXVI.A.2.(4) below; 3) no longer have authorization under CESA to take coho salmon; 4) continue to implement the mitigation measures the Permit requires until the Department determines that take of coho salmon that occurred during the time the Permit and all sub-permits were in effect has been fully mitigated; and 5) prepare and submit to the Department the Final Report

XXVII. TERMINATION

This Permit may be terminated by the Department at its sole discretion if circumstances or new information provides evidence that continued program implementation may result in jeopardy to coho salmon, or if such termination is required by law or court order. For the purpose of the Permit, "jeopardy"

includes, but is not limited to, to the probable extirpation of any coho salmon cohort.

XXVIII. NOTICES

Written notices, reports, and other communications required by or relating to the Permit shall be delivered to the Department by first-class mail to the addresses below, unless the Department instructs SVRCD otherwise. Notices, reports, and other communications should reference the Program name, the name of the Permittee (i.e., SVRCD), and the Permit number (i.e., 2081-2005-026-01) in the cover letter or other submitted document.

Original cover with attachment(s) to:

Gary Stacey, Regional Manager
California Department of Fish and Game
601 Locust Street
Redding, CA 96001
Office: 530-225-2636
Fax: 530-225-2381

Copy of cover without attachment(s) to:

General Counsel, Department of Fish and Game
1416 Ninth Street, 12th Floor
Sacramento, CA 95814

and:

Department of Fish and Game
Habitat Conservation Planning Branch
1416 Ninth Street, Suite 1260
Sacramento, CA 95814

Unless SVRCD is notified otherwise, the Department's Regional Representative for purposes of addressing and Permit-related issues is:

Caitlin Bean, Staff Environmental Scientist
California Department of Fish and Game
Northern Region

601 Locust Street
Redding, CA 96001
Office: 530-225-2273
Fax: 530-225-2381

XIX. AMENDMENTS

The Department may amend this Permit at any time during its term with the concurrence of SVRCD. The Department may amend any sub-permit at any time during its term with the concurrence of the SVRCD and the sub-permittee. If the amendment is required by law, the Department shall amend the Permit or sub-permit regardless of whether the SVRCD or the sub-permittee concurs with such amendment.

XXX. CESA FINDINGS

To be completed after environmental review of the Program.

XXXI. ATTACHMENTS

The following documents are attached to this Permit and incorporated herein by reference:

Attachment 1, "Shasta River Watershed Map"
Attachment 2, "Covered Activities"
Attachment 3, "Monitoring and Adaptive Management Plan"

Issued by the Department of Fish and Game on [date]

Gary Stacey, Regional Manager
Northern Region

APPROVED AS TO FORM:

Ann Malcolm, General Counsel

ACKNOWLEDGMENT

The undersigned: 1) warrants that he or she is acting as a duly authorized representative of the Permittee, 2) acknowledges receipt of this Permit, and 3) agrees on behalf of the Permittee to comply with all terms and conditions of the Permit.

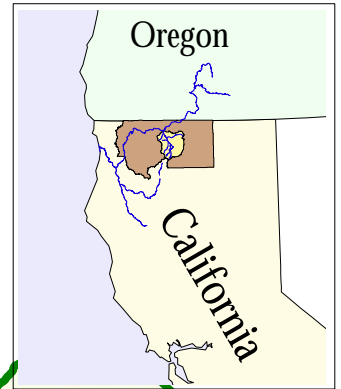
By: _____




Date: _____

Printed Name: _____

Title: _____

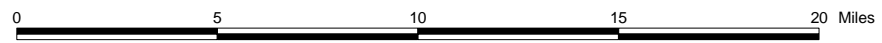
Figure 1: General Location Map and Project Area Vicinity Map for the Shasta River Watershed



 Rivers and Streams
 Roads
 Permit Area and Watershed Bdry.



3/29/05



ATTACHMENT 2

COVERED ACTIVITIES FOR THE SHASTA RIVER WATERSHED-WIDE PERMITTING PROGRAM

The Program covers the fourteen (14) categories of activities described below that are subject to the provisions of the California Endangered Species Act.

1. Water Diversions

Water diversions covered under this category include only the diversion of surface water through a conduit or opening from streams, channels, or sloughs within the Shasta River watershed by an agricultural operator for agricultural purposes in accordance with a valid water right, including one specified in the following court decree: Shasta River (1932).

2. Water Diversion Structures

This category includes only the following activities relating to water diversion structures:

- a. Ongoing management and/or maintenance of existing flashboard dams, including the placement of boards into concrete abutments across the wetted channel to build head to divert water, and the removal of the boards.
- b. Ongoing maintenance, management, and repair of boulder weirs.
- c. Installing, operating, maintaining, and removing push-up dams. "Push-up dam" is defined as a temporary diversion structure created by using loaders, backhoes, or excavators to move bedload within the stream channel to form a flow barrier that seasonally diverts the flow of the stream.
- d. Installing, operating, maintaining, and removing other temporary diversion structures that are not push-up dams. "Other temporary diversion structure" is defined as any temporary structure to divert water seasonally from a stream and is typically made with hay bales, hand-stacked rocks and cobble, tarps, wood, and/or a combination of these materials placed in the channel without the use of heavy equipment.

- e. Installing or placing pumps and sumps and maintaining existing pumps and sumps within or adjacent to the active channel of a stream, which sometimes requires the use of large machinery within or adjacent to the active channel.
- f. Installing headgates and measuring devices that meet the Department's standards on or in a diversion channel, which usually is done by excavating the site to proper elevation using large machinery, positioning the headgate and measuring device at the appropriate elevation, and installing rock or other "armoring" around the headgate to protect the structure. During installation, the stream bank could be affected by the construction of concrete forms and other necessary construction activities.

3. Fish Screens

This category includes only the installation, operation, and maintenance of the types of fish screens described below, provided they meet the Department's and the National Oceanic and Atmospheric Administration's National Marine Fisheries Service's ("NMFS") criteria for steelhead fry as they exist at the time the screen is installed. Installing a fish screen usually includes site excavation, forming and pouring a concrete foundation and walls, excavation and installation of a fish bypass pipe or channel, and installation of the fish screen structure. Heavy equipment is typically used for excavation of the screen site and bypass. If the fish screen is placed within or near flood prone areas, typically rock or other "armoring" is installed to protect the screen. The average size of the bed, channel, and/or bank area affected by the installation of a bypass pipe or channel ranges from 40 to 100 square feet. Types of fish screens include:

- a. Self-cleaning screens, including flat plate self-cleaning screens, and other self-cleaning designs, including, but not limited to, rotary drum screens and cone screens, with a variety of cleaning mechanisms, consistent with Department and NMFS screening criteria.
- b. Non-self cleaning screens, including tubular, box, and other screen designs consistent with Department and NMFS screening criteria.

4. Stream Access and Crossings

This category includes only the moving of livestock and vehicles across flowing streams or intermittent channels and/or the construction of stream crossings at designated locations where potential spawning gravels, incubating

eggs, and fry are not present based on repeated site specific surveys. Factors considered when selecting a crossing location include the stream gradient, channel width, and the ability to maintain the existing channel slope. Generally, to construct a crossing, a boulder weir is placed on the downstream side of the crossing and angular quarry rock is placed in the crossing location; the width of the crossing does not exceed 25 feet; the crossing spans the entire width of the channel; the crossing is “keyed” into the bank on each side; the approaches on both sides do not exceed a slope of 3:1; and bank armoring (usually using quarry rock) is added where needed.

5. Fencing

This category includes only the installation and maintenance of livestock exclusion fencing to protect riparian zones including the construction of fencing along livestock and vehicle crossings and livestock watering lanes.

6. Riparian Restoration and Revegetation

This category includes only the restoration, including revegetation of riparian areas, consistent with the methods specified in the most current edition of the Department’s *Salmonid Stream Habitat Restoration Manual*, or as otherwise approved in writing by the Department. The most current edition of the manual is available at <http://www.dfg.ca.gov/nafwb/index.html>. Typically, riparian vegetation is planted within or adjacent to the active channel, and often in or near the wetted channel. Plantings include herbaceous perennials, emergent species, native grasses, trees, and shrubs. Planting methods vary by species, site, and size of material planted, ranging from hand planting to using a backhoe or excavator. For riparian trees, planting densities range from 130 to 300 plantings per acre, depending on the restoration goals (e.g., shading, sediment trapping, and bank stabilization), substrate, and hydrology. Trees and cuttings range in size from small rooted plugs to large diameter pole plantings. When installing pole plantings, heavy equipment may be used to excavate to or below water table depth. Maintenance activities include the occasional use of hand tools, portable pumps, pick-up trucks and/or water trucks in or near the bed, bank, or channel, for irrigation, debris removal, and replanting of restoration sites.

7. Instream Structures

This category includes only the installation, maintenance, and repair of the following instream structures consistent with the methods specified in the most current edition of the Department’s *Salmonid Stream Habitat Restoration Manual*, available at <http://www.dfg.ca.gov/nafwb/index.html>:

- a. structures to protect the bed and banks of streams;

- b. bioengineered habitat structures;
- c. deflectors;
- d. boulder clusters;
- e. boulder weirs for instream habitat or to replace flashboard dams, push-up dams, and other temporary diversion structures;
- f. large woody debris; and
- g. spawning gravels to enhance spawning habitat

8. Stream Gages

This category includes the installation and maintenance of stream gages in the active stream channel, usually using pipe 2" or greater in diameter. Typically, the pipe is secured to the bank by notching it into the bank and by then attaching it to the bedrock, a boulder, or a concrete buttress. Generally, heavy equipment is not needed to install and maintain stream gages.

9. Barrier Removal and Fish Passage Projects

The projects listed below are covered under this category, although the Department may add others to the list in the future. Each project will provide access to historic fish spawning and rearing habitat.

- a. Araujo Dam Demobilization and Water Quality Improvement Project.
- b. Shasta River Water Association's Dam Demobilization and Water Quality Improvement Project.
- c. Grenada Irrigation District Fish Barrier Removal Project.

10. Grazing livestock

Grazing of livestock adjacent to the channel or within the bed, bank, or channel, of the Shasta River or its tributaries in accordance with a grazing management plan approved by the Department. The grazing plan shall address the timing, duration, and intensity of livestock grazing within the riparian zone and shall explain how the proposed management plan will result in improved riparian function and enhanced aquatic habitat.

11. Water Management

Covered activities include water management, water monitoring, and watermastering (either State or private) activities; including the operation of head gates in conjunction with measuring devices to assure that each diversion is operated in compliance with the associated water right or adjudicated volume; the ongoing management and/or maintenance of existing flashboard dams, including the placement of boards into concrete abutments across the wetted channel to build head to divert water, and the removal of the boards; actions related to water diversion construction; operation, repair, minor alteration, replacement, and removal; the installation, operation, maintenance, repair, minor alteration, replacement, and removal of headgates and measuring devices on or in a diversion channel; the installation, operation, repair, minor alteration, removal, replacement and maintenance of stream gages in the active stream channel. Water management activities infrequently require moving equipment or vehicles across flowing streams or intermittent channels and/or the construction of stream crossings at designated locations where potential spawning gravels, incubating eggs, and fry are not present based on repeated site specific surveys.

12. Permit Implementation

Other activities associated with the implementation of avoidance, minimization and mitigation measures required by this Permit or a Streambed Alteration Agreement.

13. Monitoring

Activities associated with the determination of whether or not the terms and conditions of this ITP, each sub-permit, or a SAA are being fulfilled and are effective.

14. Research

Activities associated with conducting studies to improve our understanding of salmonid distribution, natural history, population dynamics, etc. in the Shasta River watershed.

ATTACHMENT 3

MONITORING AND ADAPTIVE MANAGEMENT PLAN

I. Introduction

This Attachment describes the SVRCD's Incidental Take Permit Monitoring and Adaptive Management Plan (Monitoring Plan). Monitoring includes observation, detection, and recording of environmental conditions, resources, and effects of covered activities and Permit avoidance, minimization, and mitigation measures ("conservation measures") for the Covered Species. The evaluation of monitoring information will provide the basis for assessing compliance with terms and conditions of the Permit and for assessing success of the Permit in attaining biological goals and objectives. An adaptive management approach will guide the manner in which information collected by the SVRCD through monitoring and directed research, as well as new information collected by others, will be used to continually evaluate and improve implementation of the Covered Species conservation measures. Collecting and analyzing data through monitoring and research are essential components of adaptive management.

The SVRCD has been conducting environmental monitoring in the Shasta Valley watershed since 1992. To date, monitoring has focused on gathering information on the environmental condition of the riparian and stream environments, condition of anadromous salmonid habitat, and anadromous salmonid populations within the watershed. The SVRCD expects to continue to conduct or participate in these types of monitoring efforts during the duration of the Permit. However, the SVRCD will be focusing much of its attention and staffing to monitoring and other activities required by the Permit.

II. Goals of the Monitoring Plan

The goals of the Monitoring Plan are to evaluate the compliance, implementation, and effectiveness of conservation measures required pursuant to this Permit and all sub-permits. To meet the goals, this monitoring plan provides guidance so that the SVRCD and the Department can document and assess the compliance, implementation and effectiveness of the conservation measures and assure that the projects are meeting the objectives of the Permit. In addition, the Monitoring Plan provides guidance regarding adaptive management. Adaptive management will be employed to modify and refine conservation measures based upon the results of implementation and effectiveness monitoring, to maximize effectiveness of coho recovery actions and landowner participation.

III. Scope of Area to be Monitored

Because the Permit is watershed-wide and there is uncertainty as to which agricultural operators will become sub-permittees, the geographic scope of

monitoring activities will be only those properties of agricultural operators who become sub-permittees.

IV. Monitoring Approaches

The SVRCD will be conducting several types of monitoring pursuant to this Monitoring Plan. The SVRCD may request sub-permittees to collect some monitoring data required for the Annual Report. Strictly defined, “monitoring” is the systematic and usually repetitive collection of information, typically used to track the status of a variable or system. This monitoring plan includes three components: compliance monitoring, implementation monitoring, and effectiveness monitoring. Below are descriptions of the types of monitoring that will be conducted and key components of each approach.

A. Compliance Monitoring

Compliance monitoring is conducted to determine whether the conservation measures agreed for particular designated sites are in place and operating; collection and evaluation of data, including self-monitoring reports, and verification to show whether permitted conditions are in compliance with the limits and conditions specified in the Permit or sub-permit. This type of monitoring is done to ensure that permit and/or sub-permit conditions and statutory requirements have been met

Compliance monitoring tracks the status of Permit condition implementation, to verify that the measures required by the Permit are being implemented as specified. The degree of compliance is determined by comparing field information with conditions of compliance as specified by the Permit and/or sub-permit.

1. SVRCD shall be responsible for determining if it is fulfilling the terms and conditions of this Permit by instituting a comprehensive monitoring program. The program shall include a means to confirm and monitor the implementation of the mitigation measures for which it is responsible.
2. SVRCD shall be responsible for determining if the sub-permittee is fulfilling the terms and conditions of their sub-permits by instituting a comprehensive monitoring program. The program shall include a means to: (1) confirm and monitor the implementation of the minimization and avoidance measures for which the sub-permittees are responsible, and (2) identify sub-permittees who are not or who have not implemented the terms and conditions of their sub-permits. SVRCD shall immediately notify the Department of sub-permittees who SVRCD believes are not fulfilling or implementing a term or condition of their sub-permit.

3. SVRCD shall summarize the results of its monitoring activities in each of its Annual Reports. Analysis of the past year's monitoring activities and the monitoring data shall be provided to the Department at that time.
4. After relinquishment, revocation, expiration, or termination of the Permit, SVRCD shall deliver a Final Report (described below) to the Department analyzing all of the avoidance, minimization, and mitigation measures implemented pursuant to this Permit, including an evaluation of their effectiveness.
5. SVRCD's obligations under this Permit shall not end until the Final Report has been deemed complete by the Department (Section XVI.C), regardless of when the Permit expires or is revoked, relinquished, or terminated.
6. SVRCD shall conduct photo monitoring to document the installation, operation, maintenance, and effectiveness of all avoidance, minimization, and mitigation activities (individually, "project") required under this Permit and any sub-permit.

Photo monitoring shall be used to document current conditions, implementation and effectiveness by:

- documenting pre- and post-site conditions;
- identifying key steps taken during and after the completion of a project;
- determining whether a project was correctly implemented pursuant to SVRCD and Department guidelines; and
- document ongoing maintenance of the project.

Sequential photographs shall be taken over time in order to show changes in site conditions. At a minimum, photographs shall be taken at three different times: before project implementation, directly after project implementation, and again at a later date appropriate to the particular project,

7. SVRCD shall conduct monitoring activities prior to and immediately after project implementation, using photographs and checklists for documentation. That information shall include pre-project and pre-treatment checklists. The pre-treatment checklist shall be used during monitoring to help judge effectiveness of the project.
8. SVRCD and Department project evaluators shall have access to photographs and project files to take with them on site visits.

9. A primary avoidance measure required by the Permit is that all sub-permittees comply with valid water right(s). California Department of Water Resources (DWR) currently provides watermaster service for agricultural water use in portions of the Shasta River watershed. As a sub-permittee to this Permit, DWR shall provide water use verification data to the Department, as specified in the Permit, on a monthly basis from April to October each year for the duration of the Permit. The SVRCD may identify an alternative watermaster service or other verification methods approved by the Department to verify that each sub-permittee that participates in this Permit Program is in compliance with their water right.

In addition to the water use verification data:

- The watermaster shall report to the Department any sub-permittees that are not complying with their adjudicated water rights.
- Within ten working days upon receiving such notification from the watermaster, the Department shall consult with the sub-permittee regarding the non-compliance.

B. Implementation Monitoring

Implementation monitoring is conducted to document whether or not management practices were applied as designed. Project and contract administration is a part of implementation monitoring. Implementation monitoring will be conducted by the SVRCD to verify that permitted activities and projects have been carried out and completed according to the conditions specified for the activity or project. The level of successful implementation is determined by comparing field information with performance criteria developed for each activity and practice implemented.

Generally, performance criteria set standards for the reliability of a product in terms of actual output; for each element in a unit of competency, performance criteria describe the tasks against which agents or products are assessed; Minimal level by which an objective is considered to be attained; qualitative or quantitative criteria which the agent or product is to satisfy in performing its functional requirements.

Implementation monitoring includes:

- Establishing photo-monitoring sites prior to implementation of each activity, following the procedures set forth in this Monitoring Plan;
- Photo-documenting pre- and post- site conditions;
- Identifying and photographing key steps taken during project implementation;

- Making a determination regarding whether or not a project was implemented correctly and in compliance with permit requirements;
- Filling out a project type-specific, implementation field check-lists;
 - Note: The implementation checklists will be completed after every project is implemented;
- Within ten working days, the SVRCD shall notify the Department in writing when either:
 - An activity or project has not been implemented according to specified conditions;
 - An activity or project has failed for other reasons not associated specifically to how the activity or project was implemented;
 - For all such projects, the SVRCD shall take additional photographs to document its findings;
- All information from implementation monitoring will be recorded in the SVRCD's database.
- Status of implementation shall be reported to the Department annually.

C. Effectiveness Monitoring

Effectiveness monitoring is conducted to determine if some activity is having the desired effect; documenting how well the management practices meet intended objectives for the defined area [can evaluate the cause and effect relations between management activities and conditions of the dependent resources]; evaluating and documenting the total effectiveness of site-specific actions; determining the degree to which the biological system responds to management activities as expected

In order to provide information for adaptive management within the Permit, the SVRCD will conduct effectiveness monitoring to determine effectiveness of specified activities and practices and document habitat and fishery response of activities carried out under the Permit to benefit the Covered Species. Effectiveness monitoring evaluates the success of the Permit in meeting its stated biological objectives. Effectiveness monitoring will be conducted in three, tiered approaches: qualitative habitat effectiveness, quantitative habitat effectiveness, and quantitative fish-response.

Effectiveness monitoring has three main monitoring objectives:

- To evaluate the effectiveness of specific permitted activities and practices and restoration measures in achieving aquatic resource protection and restoration objectives on a site scale, and determine factors that influence effectiveness.
- To provide the Department with evaluations of effectiveness of projects within the watershed for comparison to similar activities in similar watersheds for the purposes of improving the effectiveness such activities and practices.

- To document overall effectiveness of activities and practices carried out under the Permit for the duration of the Permit for purposes of adapting management with the watershed to protect the Covered Species.

Effectiveness monitoring shall occur, at a minimum annually. Monitoring frequency shall be based on the project type.

The following conditions apply to all effectiveness monitoring:

1. SVRCD shall determine the effectiveness of the avoidance, minimization, and mitigation measures identified in this Permit and sub-permits and the extent to which the objectives of those measures have been met.
2. SVRCD shall conduct effectiveness monitoring before and after project implementation.
3. SVRCD shall identify at least one specific objective for each project installed pursuant to the Permit. The objective shall be documented in project files by SVRCD and shall be reported to the Department in the Annual Report.
4. SVRCD shall conduct qualitative effectiveness monitoring for all conservation measures implemented pursuant to this Permit and any sub-permit. In addition, SVRCD shall conduct quantitative effectiveness monitoring of 10% of all instream measures implemented.
5. The SVRCD shall annually document conservation measure effectiveness using effectiveness check-lists or field sheets for restoration.

Note: When appropriate, the Department will provide revised checklists prior to each successive field season after the Permit is executed.

6. Within ten working days, the SVRCD shall notify the Department in writing when, while conducting effectiveness monitoring, the SVRCD determines:
 - a. An activity or project has been impacted, rendered inoperative, or destroyed due to an environmental (e.g., flooding) or human-caused (e.g., vandalism) conditions;
 - b. An activity or project has been impacted, rendered inoperative, or destroyed due to other reasons;

- c. For all such projects, the SVRCD shall utilize the photo-monitoring site to document its findings;
7. All information from effectiveness monitoring activities shall be recorded in the SVRCD's database.
8. Status of effectiveness shall be reported to the Department annually in the Status Report.

D. Qualitative Effectiveness Monitoring for Habitat Change

Qualitative effectiveness monitoring consists of utilizing both permanent photo-monitoring sites and field checklists to determine condition/change. For each activity carried out under the Permit, the SVRCD, in conjunction with the sub-permittees and under the guidance and technical support of the Department, will conduct the following tasks.

1. Annually utilize the established photo-monitoring sites to document habitat conditions/changes as a result of the implementation of the conservation measure;
2. Annually document the effectiveness of the selected activities and practices, using the post-treatment, qualitative checklists; Note: Use of these checklists will commence one year after activities and practices under the Permit have occurred;
3. Annually summarize the findings and results of qualitative effectiveness monitoring in the Annual Report.

E. Quantitative Effectiveness Monitoring for Habitat Change

Quantitative effectiveness monitoring consists of the use of scientifically valid field monitoring methodologies and analyses to determine condition change of specific habitat conditions affected by the conservation measure. For the ten-percent of the activities where quantitative monitoring is being carried out under the Permit, the SVRCD, in conjunction with the sub-permittees and under the guidance and technical support of the Department, will conduct the following tasks:

1. At a minimum, annually conduct quantitative effectiveness monitoring, using project-specific methodologies; Application of quantitative habitat effectiveness monitoring shall not start sooner than after the initial rain season or major storm event after activities and practices have been initiated;
2. Annually analyze habitat data gathered from the monitored activities and practices;

3. Annually report to the Department the findings of the analysis of the quantitative data, including, but not limited to, the degree of individual and collective effectiveness of the monitored activities and practices.

F. Quantitative Effectiveness Monitoring for Fish Response

Quantitative effectiveness of fish response consists of the use of scientifically valid field monitoring methodologies and analyses. For ten-percent of the instream habitat enhancement measures carried out under the Permit quantitative effectiveness monitoring will be conducted to determine fish response to specific habitat conditions enhanced by the activity. The SVRCD, in conjunction with the sub-permittees and under the guidance and technical support of the Department, will conduct the following tasks:

1. Annually conduct quantitative fish-response monitoring, using project-specific methodologies; Note: Application of quantitative fish-response monitoring will not start sooner than is applicable to project-type, after activities and practices have been initiated;
2. Annually analyze fish data gathered from the monitored activities and practices;
3. Annually report to the Department the findings of the analysis of the quantitative data, including, but not limited to, the degree that fish appear to be responding to the specific conservation measure implemented at the monitoring site.

V. Methods of Monitoring

Different types of monitoring will be applied at different times and frequencies in relation to each of the conservation measures required pursuant the Permit. Specific monitoring approaches for each conservation measure shall be identified.

A. Methods of Data Collection

All data will be collected in the field, at the project site-specific level. Project sites may have data recorded in three forms; photographs, field notes, and field data sheets.

1. Photographs

Permanent photograph sites shall be set up for every conservation measure for the purposes of compliance and implementation monitoring. These same sites will be used for qualitative effectiveness monitoring of selected projects. The

SVRCD may opt to utilize photographs for additional effectiveness monitoring, when the SVRCD believes photographs will enhance its ability to report on effectiveness of implemented activities and practices.

SVRCD shall conduct photo monitoring to document the installation, operation, maintenance, and effectiveness of all avoidance, minimization, and mitigation activities (i.e., conservation measure) required under the Permit and any sub-permit.

Photo monitoring shall be used to document compliance, implementation and effectiveness by:

- documenting pre- and post-site conditions;
- identifying key steps taken during and after the completion of a project;
- determining whether a project was correctly implemented and is in compliance with SVRCD and Department guidelines; and
- document ongoing maintenance of the project.
- facilitate the evaluation of how well the project met the objectives
- document unanticipated problems or negative outcomes to an activity,

Sequential photographs shall be taken over time in order to show changes in site conditions. At a minimum, photographs shall be taken at three different times: before project implementation, directly after project implementation, and again at a later date appropriate to the particular project. The photo sequence should include pre- project photos taken of the project area before the project is implemented, post-project photos taken directly after project implementation, and post-project photos taken during subsequent effectiveness monitoring, all from the same photo point.

2. Field data sheets

Data sheets specifically developed for monitoring will be used for recording monitoring information in a systematic and standardized approach. For all monitoring, the data sheets are customized to the type of activity or practice being implemented. The categories of monitoring for which field sheets have been developed are:

- Implementation monitoring
- Qualitative effectiveness monitoring of habitat change: pre-treatment condition
- Qualitative effectiveness monitoring of habitat change: post treatment condition
- Quantitative effectiveness: habitat change
- Quantitative effectiveness: fish response

Baseline information shall be collected prior to project implementation to allow comparison to post-project conditions and effectiveness. This information will include pre-project and pre-treatment checklists. The pre-treatment checklist shall be used during monitoring to help judge effectiveness of the project.

All data sheets shall be provided by the Department.

3. Other data

Where appropriate, the SVRCD may also use other methods to record field data such as field notes, Global Positioning System recorders, Hobo temperature recorders, or stream flow gauges to record pertinent monitoring information.

VI. Monitoring timing, frequency, and duration

A. Timing of monitoring

Two types of monitoring have to be initiated after the activity or practice sites are selected but before ground-work can commence. This must occur to ensure that the SVRCD collects data regarding pre-project condition to assess post-project change. The establishment of the permanent photographic sites and collection of the qualitative, pre-treatment effectiveness information must occur at this time.

Three types of monitoring take place after an activity or practice has been completed. Photographs documenting both implementation of the project and compliance with the Permit shall be taken. The implementation checklist is shall be completed. Last, any specific compliance information shall be recorded.

The timing of effectiveness monitoring is based on the feature being measured, and how it responds to environmental conditions and seasonal differences. For habitat condition, the occurrence of storm events, the frequency and magnitude of these events, and the duration of the rain season all affect when one has to measure changes at a site. In addition, the presences of different life-stages of the Covered Species, and how each life stage may respond to a project, dictates the timing of field monitoring.

B. Frequency of monitoring

Compliance monitoring frequency will be based on project type. It can be performed as infrequently as once a year (e.g., continued use of screening). However, a greater frequency might be necessary in some cases (e.g., summer flow).

Implementation monitoring occurs prior to and after completion of a specific project.

Effectiveness monitoring occurs at variable frequencies, dependent on how rapidly or often the measured feature may change. Water and fish variables can change often and rapidly, requiring more frequent monitoring to be able to detect change. Other more stable or slower-changing variables, such as a functioning screen or dam or installed large woody debris, require less frequent monitoring. For the interim, the SVRCD, in consultation with the Department, will adhere to the following preliminary frequencies.

- More variable features: No less than annually and no more than weekly, given the appropriate seasonal window:
 - Seasonal window:
 - late November to January- adult fish, spawning grounds
 - late February to May- fry and spring habitat conditions
 - mid May until rain season- water flow and juveniles

C. Duration of monitoring

Monitoring will continue for the duration of the Permit. Compliance monitoring and use of the permanent photo sites will occur annually. Implementation monitoring occurs prior to and after a conservation measure is completed. For effectiveness monitoring, the type of project and the environmental feature's timing and duration of response determine when to terminate monitoring. However, since the Permit period is ten years, effectiveness monitoring for each of the projects, (that constitute the ten-percent being tracked) will span the lifetime of the Permit.

VII. Tracking and Reporting

A. Tracking

The SVRCD will develop and maintain a comprehensive database to track implementation of all aspects of the Monitoring Plan. All data from photographs, field data sheets, and other recording technologies will be integrated in the monitoring database. Completed field data sheets will be entered into the database by SVRCD staff. The database will be structured to allow for future expansion and integration with external databases (e.g., linkage to agency or other GIS map libraries). The database will be structured to facilitate the following requirements:

- Inclusion of all types of recorded, field data;
- data documentation such that future users can determine why, how, and where data were collected;
- quality assurance and quality control of the data;
- access and use of the most current information in assessment and decision making for purposes of interpreting monitoring information and plan revision;

- evaluation of data by all appropriate SVRCD and Department database users, as appropriate;
- facilitation of data to produce monitoring reports;
- utilization of field data to conduct analyses, as appropriate.

Reports generated from this database will allow evaluation of the activities required by the Permit.

B. Reporting

1. Annual Report

After the effective date of the Permit and until the Permit expires or terminates, SVRCD shall provide the Department an Annual Report by April 30 each year that covers the period of time from February 1 to January 31 the previous year.

Each Annual Report shall include at a minimum, the following information:

- a general description of the status of the Program, including a description of all avoidance, minimization, and mitigation measures that were implemented during the previous year;
- a copy of an implementation database with notes showing the current implementation status of each avoidance, minimization, and mitigation measure;
- the results of all compliance, implementation, and effectiveness monitoring conducted pursuant to the Permit;
- all monitoring data; and
- an assessment of the efficacy of the monitoring program and recommended changes to the program based on interpretation of monitoring results.

Additionally, for reports subsequent to the first Status Report and in particular the fifth year program review Status Report the following shall be included:

- an assessment of status and trend of monitored activities and practices;
- an assessment of the effectiveness of each completed or partially completed measure in avoiding, minimizing, and/or mitigating for impacts from Covered Activities; and
- a summary and analysis of all compliance, implementation, and effectiveness of monitoring conducted on the avoidance, minimization and mitigation measures.

2. Five-Year Report

Five years after the effective date of the Permit, SVRCD shall conduct a comprehensive review of the Program and submit its findings in the form of a Five-Year Report to the Department. As part of its review, SVRCD shall evaluate coho recovery task implementation and community participation. The Five-Year Report shall include an analysis of the Program beginning on the effective date of the Permit, as well as the activities that have been implemented. The Five-Year Report shall include recommended adaptive management actions to improve operations.

3. Final Report

No later than six months after the Permit expires and all mitigation measures have been implemented, SVRCD shall provide the Department with a Final Report. SVRCD shall prepare the Final Report and include, at a minimum:

- a. a copy of the implementation database with notes showing when each avoidance, minimization, and mitigation measure was implemented;
- b. all available information about the incidental take of coho salmon the Permit covers;
- c. information about the impacts the Covered Activities have had on coho salmon notwithstanding the implementation of the avoidance, minimization, and mitigation measures;
- d. the beginning and ending dates of all construction projects the Permit or any sub-permit covers;
- e. an assessment of the effectiveness of the Permit's and sub-permits' terms and conditions to avoid, minimize, and mitigate impacts on coho salmon;
- f. recommendations on how those terms and conditions might be changed to more effectively avoid, minimize, and mitigate such impacts in the future; and
- g. any other pertinent information.

VIII. Adaptive Management

Adaptive management is the process whereby management is initiated, evaluated, and refined.

- It recognizes and prepares for the uncertainty that underlies resource management decisions
- Continually evaluates and modifies management practices.

- Uses information gained from past management experiences to evaluate both success and failure, and explore new management options.

Based on the best scientific information currently available, the measures outlined in this Permit will effectively achieve the biological goals and objectives of the Permit. However, habitat conditions within the Permit area and the status of the Covered Species will likely change during the Permit period. Furthermore, it is possible that additional and different conservation measures, not identified in the Permit, will be developed or proven to be more effective in achieving the biological goals and objectives of the Permit than those currently identified for implementation. Last, results of the implementation and effectiveness monitoring may also indicate that some conservation measures, activities, and practices are more effective in achieving the biological goals and objectives of the Permit. To address 1) these uncertainties and 2) monitoring information, the SVRCD will have an on-going evaluation of the progress of Permit activities and practices through an adaptive management process to:

- in cooperation with the Department, gauge the effectiveness of Permit conservation measures and techniques to implement them;
- propose alternative or modified conservation measures as the need arises; and
- address changed and unforeseen circumstances.

The cornerstone of the Permit adaptive management process is the Monitoring Plan. Information collected through the monitoring will be used to manage watershed lands and provide information to direct future activities and practices to conserve the Covered Species and habitat. During the early phases of Permit implementation, monitoring will provide the SVRCD with the information necessary to improve the efficacy of techniques that are employed to better and more successfully enhance or restore Covered Species habitat. The adaptive management process will allow for the experience gained through early projects to shape and refine future activities.

The adaptive management program will be administered by the SVRCD. Responsibilities of the SVRCD for implementing the adaptive management plan include the following:

- A. gather monitoring data, including relevant information developed by others, conducting appropriate data analysis, and maintaining an integrated database;
- B. disseminate generated monitoring and research information and reports, including monitoring analysis and reports and research papers, minimally, to sub-permttees and the Department;
- 1. assess the effectiveness of conservation measures;

2. identify the need to modify existing or to adopt additional conservation measures;
3. identify the need to modify the monitoring program;
4. identify the need for and implementing experimental pilot and demonstration projects;
5. identify and prioritizing research needs and conducting limited directed research, as funding allows;
6. incorporate monitoring, research, and other adaptive management–related activities into annual work plans; and contacting Science Advisors, as needed, to solicit input regarding new scientific information relevant to implementation, important data gaps, monitoring and management methods, and data interpretation.

Under the direction of the Department and the SVRCD, the adaptive management process will also allow for scientific examination of the monitoring information for the purpose of evaluating the effectiveness of existing or proposed avoidance, minimization, and mitigation measures. The SVRCD will incorporate recommendations offered through these reviews, where appropriate, into implementation of the Permit. It is also intended that the adaptive management process will provide the basis for budget and funding decisions throughout the term of the Permit. Adaptive management, in conjunction with monitoring and research, will provide the SVRCD with a process to effectively address uncertainties associated with successful implementation of the Permit.

IX. Measurement of the Overall Success of the Permit Program

The Department has developed priorities for long-term population monitoring of salmonids in the Shasta river watershed. The Department will conduct this critical monitoring using existing fisheries staff with additional funds necessary for equipment, operations, and temporary field personnel. Coho salmon monitoring is the primary objective. This effort will also dovetail with recommendations in the Coho Recovery Plan concerning limiting factors and trends, and prioritize geographic locations for restoration most benefiting these species. One of the primary goals of this effort is to provide sound and statistically defensible data to estimate the number of adult coho returning to the basin and the relationship to juvenile coho production in the Shasta River basin. Data collection methods include the operation of rotary screw traps to estimate juvenile abundance and carcass surveys to provide adult population estimates coho salmon. These data will allow for an analysis of adult to juvenile ratio trends over time to determine if the permit program is resulting in a stable or increased production rate based on the ratio of juveniles per adult in the watershed.